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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/337,278	06/22/1999	TAISUKE HIROOKA	990659	8796

23850 7590 01/15/2002

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WASHINGTON, DC 20006

EXAMINER

SMETANA, JIRI F

ART UNIT	PAPER NUMBER
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1746

10

DATE MAILED: 01/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-10

Advisory Action

Application No.

09/337,278

Applicant(s)

HIROOKA ET AL.

Examiner

Jiri F. Smetana

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 09 January 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1, 3, 5 and 7-10.

Claim(s) withdrawn from consideration: _____

8. ☒ The proposed drawing correction filed on 22 June 1999 is a) ☒ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☐ Other: _____

ADVISORY ACTION - ATTACHMENT

Examiner's Note

1. Applicant argues that there is no motivation to combine Miyashita et al., U.S. Patent No. 6,167,583, in view of Kanno, U.S. Patent No. 5,873,380. Specifically, Applicant argues that since the present invention does not teach the collision of water with the wafer, as in Kanno, there would be no motivation to lower the resistivity of the water. However, Kanno is not used to only teach that the resistivity of the water is lowered. This limitation is already explicitly taught in the primary reference of Miyashita (column 1, lines 22-25). Kanno is used by the Examiner to teach that carbon dioxide gas can be used to adjust the resistivity of the cleaning water. Kanno does teach that collision of water against the wafer can cause harmful static charge, which is reduced by lowering the resistivity of the cleaning water. However, the harmful static charge is created by the motion of the water against and across the wafer. As in Applicant's invention, wherein there exists some sort of motion of pure cleaning water across the wafer, the risk of static charge occurring on the surface of the wafer is increased. And since the resistivity of the cleaning water in the primary reference of Miyashita already discloses a range of about 5 M Ω to 18 M Ω (column 1, lines 22-25), the motivation of lowering the resistivity of the cleaning water by carbon dioxide to reduce the static charge generated on the surface of the wafer is taught in Kanno.
2. Applicant argues that neither Miyashita nor Kanno disclose wherein the resistivity of the cleaning water should be below 5 M Ω . However, as explained in the prior Office Action, Paper No. 7, since the prior art of Miyashita teaches a "resistivity of about 5 M Ω

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to 18M Ω " (column 1, lines 22-23), such range of "about 5 M Ω to 18M Ω " allows for lower resistivities, thus the ranges overlap. *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997). Further, a prima facie case of obviousness exists where the claimed range and prior art range do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America V. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

3. Applicant argues that there would have been no motivation to combine Miyashita and Kanno in view of Takehiko et al., JP 04-206724. Particularly, Applicant argues that Miyashita does not suffer from problems associated with static charge. However, Takehiko teaches that prevention of electrification of the wafer surface and the prevention of foreign matter from attaching to the wafer surface can be greatly enhanced by adjusting the resistivity of the cleaning water with gaseous carbon dioxide (abstract). Therefore, Takehiko clearly teaches that foreign matter removal from the surface of the wafer is increased by the use of carbon dioxide. It is immaterial as to whether Miyashita acknowledges any problem associated with static charge, so long as Takehiko teaches a motivation to do so, along with the improved rate of removal of foreign matter.

4. Applicant argues that there is no suggestion from the prior art that the addition of carbon dioxide gas would increase the particle elimination rate. However, as explained above, Takehiko clearly teaches this motivation. In any event, it is not necessary that the prior art suggest the combination to achieve the same advantage or result

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discovered by Applicant. *In re Lintner*, 173 USPQ 560 (CCPA 1972); *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990). The reason or motivation to modify the references may often suggest what the inventor has done, but for a different purpose or to solve a difference problem.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiri F. Smetana whose telephone number is (703)605-1173. The examiner can normally be reached on Monday-Friday (7:30am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703)608-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7718 for regular communications and (703)873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Jiri F. Smetana
Patent Examiner
Art Unit 1746

jfs
January 14, 2002


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700